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EXAMINER	
LI, SHI K	

ART UNIT	PAPER NUMBER
2613	

DATE MAILED: 07/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/613,284	MCALLISTER ET AL.	
	Examiner	Art Unit	
	Shi K. Li	2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 July 2003 and 24 November 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-34* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-34* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *03 July 2003* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p) because the numbers and letters of FIG. 1, FIG. 2, FIG. 3, FIG. 4a and FIG. 6 are not legible and the numbers and letters of FIG. 1, FIG. 2, FIG. 3, FIG. 4a and FIG. 6 are not uniform, clean and well defined. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claim 1-3 and 21-22 are rejected under 35 U.S.C. 102(e) as being anticipated by Asahi (U.S. Patent 6,704,508 B1).

Regarding claims 1 and 21, Asahi discloses in FIG. 1 a conventional optical crossconnect with monitoring capability. FIG. 1 comprises a plurality of spatially-separated channels 701-1 through 701-n, each of which carries information, a plurality of modulator 709-1 through 709-n, and supervisory signal generating means 710-1 through 710-n for modulating the data with a carrier identifier.

Regarding claims 2 and 22, Asahi teaches in FIG. 24 that the spatially-separated channels are demultiplexed from a WDM signal via a demultiplexer.

Regarding claim 3, Asahi teaches in FIG. 24 multiplexer for multiplexing the spatully-separated channels into WDM signal.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1-3, 7-17, 21-22 and 26-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Trisnadi et al. (U.S. Patent 7,054,515 B1) in view of Heismann et al. (F. Heismann et al., "Signal Tracking and Performance Monitoring in Multi-Wavelength Optical Networks", ECOC'96, 1996).

Regarding claims 1, 21 and 28, Trisnadi et al. teaches in FIG. 5 a power equalization system for WDM signal. FIG. 5 comprises a plurality of spatially-separated channel demultiplexed by demultiplexer 420, a plurality of modulator 435 (FIG. 6A shows that the modulator 435 comprises a plurality of elongated elements 502 which act as modulators) and a electronics 455 for modulating the spatially-separated channels. The difference between Trisnadi et al. and the claimed invention is that Trisnadi et al. does not teach modulating with a carrier identifier. Heismann et al. teaches in FIG. 1 to use pilot tone for tagging wavelength channels so that they can be tracked and monitored in an optical network. One of ordinary skill in the art would have been motivated to combine the teaching of Heismann et al. with the power

equalization system of Trisnadi et al. because tagging wavelength channels with low-frequency pilot tones allows monitoring the channels without converting the high-speed information data into electrical signals. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to tag wavelength channels with pilot tones, as taught by Heismann et al., in the power equalization system of Trisnadi et al. because tagging wavelength channels with low-frequency pilot tones allows monitoring the channels without converting the high-speed information data into electrical signals.

Regarding claims 2, 22 and 29, Trisnadi et al. teaches in FIG. 5 demultiplexer 420.

Regarding claims 3 and 30, Trisnadi et al. teaches in FIG. 5 to multiplexed the reflected spatially-separated channels with the multiplexer 420 to form a second WDM signal S2.

Regarding claims 7 and 26, Trisnadi et al. teaches in FIG. 5 diffraction grating elements as modulators.

Regarding claims 8, 27 and 31, Trisnadi et al. teaches dynamic channel equalizing using the modulator 435.

Regarding claims 9-12, it is obvious to select one or more wavelength channel for tagging. A selected wavelength to be tagged would be modulated with a low-frequency pilot tone while wavelength channels that are not being tagged would be modulated with a DC component based on the equalization need.

Regarding claim 13, Trisnadi et al. teaches in FIG. 5 demultiplexer 420.

Regarding claims 14-15, it is obvious to use the same tag in different time for two different channels since the channels can still be uniquely identified. The modified apparatus of Trisnadi et al. and Heismann et al. is clearly capable of doing so.

Regarding claim 16, Trisnadi et al. teaches in FIG. 5 demultiplexer 420.

Regarding claim 17, Trisnadi et al. teaches in FIG. 5 to multiplexed the reflected spatially-separated channels with the multiplexer 420 to form a second WDM signal S2.

6. Claims 4 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Asahi (U.S. Patent 6,704,508 B1) in view of Terahara (U.S. Patent 6,134,034).

Asahi has been discussed above in regard to claims 1-3 and 21-22. The difference between Asahi and the claimed invention is that Asahi taps the monitored signal before the multiplexer. Terahara teaches in FIG. 13 a channel monitoring apparatus where the monitor taps signal at the output of multiplexer 18. Tapping monitored WDM signal from the output of multiplexer is desirable for power equalization application because it takes into account the effect of the multiplexer. One of ordinary skill in the art would have been motivated to combine the teaching of Terahara with the optical crossconnect of Asahi because tapping at the output of the multiplexer takes into account the effect of the multiplexer, which is desirable for power equalization application. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to tap signal at the output of the multiplexer, as taught by Terahara, in the optical crossconnect of Asahi because tapping at the output of the multiplexer takes into account the effect of the multiplexer, which is desirable for power equalization application.

Terahara teaches in FIG. 14 that spectrum monitor includes photosensor 90 and a plurality of amplitude detector for strength calculation.

7. Claims 5-6, 24-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Asahi and Terahara as applied to claims 4 and 23 above, and further in view of Tamura (U.S. Patent 5,193,219).

Asahi and Terahara have been discussed above in regard to claims 4 and 23. The difference between Asahi and Terahara and the claimed invention is that Asahi and Terahara do not teach the details of the amplitude detector. Tamura teaches in FIG. 1 and col. col. 3 lines 15-18 amplitude detector 30 that includes a rectifier 30a and integrator 30b. One of ordinary skill in the art would have been motivated to combine the teaching of Tamura with the modified optical crossconnect of Asahi and Terahara because Tamura provides the detailed implementation. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the power detector taught by Tamura in the modified optical crossconnect of Asahi and Terahara because Tamura provides the detailed implementation. It is recognized that the claimed difference exists not as a result of an attempt by Applicant to solve a problem but merely amounts to selection of expedients known to the artisan of ordinary skill as design choices.

Regarding claim 6, Terahara teaches in FIG. 14 bandpass filter 94.

8. Claims 11-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Asahi (U.S. Patent 6,704,508 B1).

Asahi has been discussed above in regard to claims 1-3. Regarding claims 11-15, the difference between Asahi and the claimed invention is that Asahi does not teach to modulate only a selected subset of the plurality of optical modulators. However, the apparatus of Asahi is capable of only modulating a selected subset of modulators. One of ordinary skill in the art would have been motivated to do so if the artisan is only interested in certain wavelength

channels, e.g., during troubleshooting or maintenance. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to only selectively modulate a subset of modulators in the optical crossconnect of Asahi during troubleshooting or maintenance.

Regarding claim 16, Asahi teaches in FIG. 24 that the spatially-separated channels are demultiplexed from a WDM signal via a demultiplexer.

Regarding claim 17, Asahi teaches in FIG. 24 multiplexer for multiplexing the spatially-separated channels into WDM signal.

9. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Asahi (U.S. Patent 6,704,508 B1) in view of Terahara (U.S. Patent 6,134,034).

Asahi has been discussed above in regard to claims 11-17. The difference between Asahi and the claimed invention is that Asahi taps the monitored signal before the multiplexer. Terahara teaches in FIG. 13 a channel monitoring apparatus where the monitor taps signal at the output of multiplexer 18. Tapping monitored WDM signal from the output of multiplexer is desirable for power equalization application because it takes into account the effect of the multiplexer. One of ordinary skill in the art would have been motivated to combine the teaching of Terahara with the optical crossconnect of Asahi because tapping at the output of the multiplexer takes into account the effect of the multiplexer, which is desirable for power equalization application. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to tap signal at the output of the multiplexer, as taught by Terahara, in the optical crossconnect of Asahi because tapping at the output of the multiplexer takes into account the effect of the multiplexer, which is desirable for power equalization application.

Terahara teaches in FIG. 14 that spectrum monitor includes photosensor 90 and a plurality of amplitude detector for strength calculation.

10. Claims 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Asahi and Terahara as applied to claim 18 above, and further in view of Tamura (U.S. Patent 5,193,219).

Asahi and Terahara have been discussed above in regard to claim 18. The difference between Asahi and Terahara and the claimed invention is that Asahi and Terahara do not teach the details of the amplitude detector. Tamura teaches in FIG. 1 and col. col. 3 lines 15-18 amplitude detector 30 that includes a rectifier 30a and integrator 30b. One of ordinary skill in the art would have been motivated to combine the teaching of Tamura with the modified optical crossconnect of Asahi and Terahara because Tamura provides the detailed implementation. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the power detector taught by Tamura in the modified optical crossconnect of Asahi and Terahara because Tamura provides the detailed implementation. It is recognized that the claimed difference exists not as a result of an attempt by Applicant to solve a problem but merely amounts to selection of expedients known to the artisan of ordinary skill as design choices.

Regarding claim 20, Terahara teaches in FIG. 14 bandpass filter 94.

11. Claims 4, 18, 23 and 32-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Trisnadi et al. and Heismann et al. as applied to claims 1-3, 7-17, 21-22 and 26-31 above, and further in view of Terahara (U.S. Patent 6,134,034).

Trisnadi et al. and Heismann et al. have been discussed above in regard to claims 1-3, 7-17, 21-22 and 26-31. The difference between Trisnadi et al. and Heismann et al. and the claimed invention is that Trisnadi et al. and Heismann et al. tap the monitored signal before the

multiplexer. Terahara teaches in FIG. 13 a channel monitoring apparatus where the monitor taps signal at the output of multiplexer 18. Tapping monitored WDM signal from the output of multiplexer is desirable for power equalization application because it takes into account the effect of the multiplexer. One of ordinary skill in the art would have been motivated to combine the teaching of Terahara with the modified power equalization system of Trisnadi et al. and Heismann et al. because tapping at the output of the multiplexer takes into account the effect of the multiplexer, which is desirable for power equalization application. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to tap signal at the output of the multiplexer, as taught by Terahara, in the modified power equalization system of Trisnadi et al. and Heismann et al. because tapping at the output of the multiplexer takes into account the effect of the multiplexer, which is desirable for power equalization application.

Terahara teaches in FIG. 14 that spectrum monitor includes photosensor 90 and a plurality of amplitude detector for strength calculation.

12. Claims 5-6, 19-20, 24-25 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Trisnadi et al., Heismann et al. and Terahara as applied to claims 4, 18, 23 and 32-33 above, and further in view of Tamura (U.S. Patent 5,193,219).

Trisnadi et al., Heismann et al. and Terahara have been discussed above in regard to claims 4, 18, 23 and 32-33. The difference between Trisnadi et al., Heismann et al. and Terahara and the claimed invention is that Trisnadi et al., Heismann et al. and Terahara do not teach the details of the amplitude detector. Tamura teaches in FIG. 1 and col. col. 3 lines 15-18 amplitude detector 30 that includes a rectifier 30a and integrator 30b. One of ordinary skill in the art would have been motivated to combine the teaching of Tamura with the modified power equalization

system of Trisnadi et al., Heismann et al. and Terahara because Tamura provides the detailed implementation. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the power detector taught by Tamura in the modified power equalization system of Trisnadi et al., Heismann et al. and Terahara because Tamura provides the detailed implementation. It is recognized that the claimed difference exists not as a result of an attempt by Applicant to solve a problem but merely amounts to selection of expedients known to the artisan of ordinary skill as design choices.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shi K. Li whose telephone number is 571 272-3031. The examiner can normally be reached on Monday-Friday (8:30 a.m. - 5:00 p.m.).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on 571 272-3022. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

skl
20 July 2006

Shi K. Li
Patent Examiner